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Prepared in cooperation with the U.S. Geological Survey

GEOLOGIC MAP OF THE VALLEY CENTER 7.5' QUADRANGLE SAN DIEGO COUNTY, CALIFORNIA: A DIGITAL DATABASE

VERSION 1.0

By
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Digital Database
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1999

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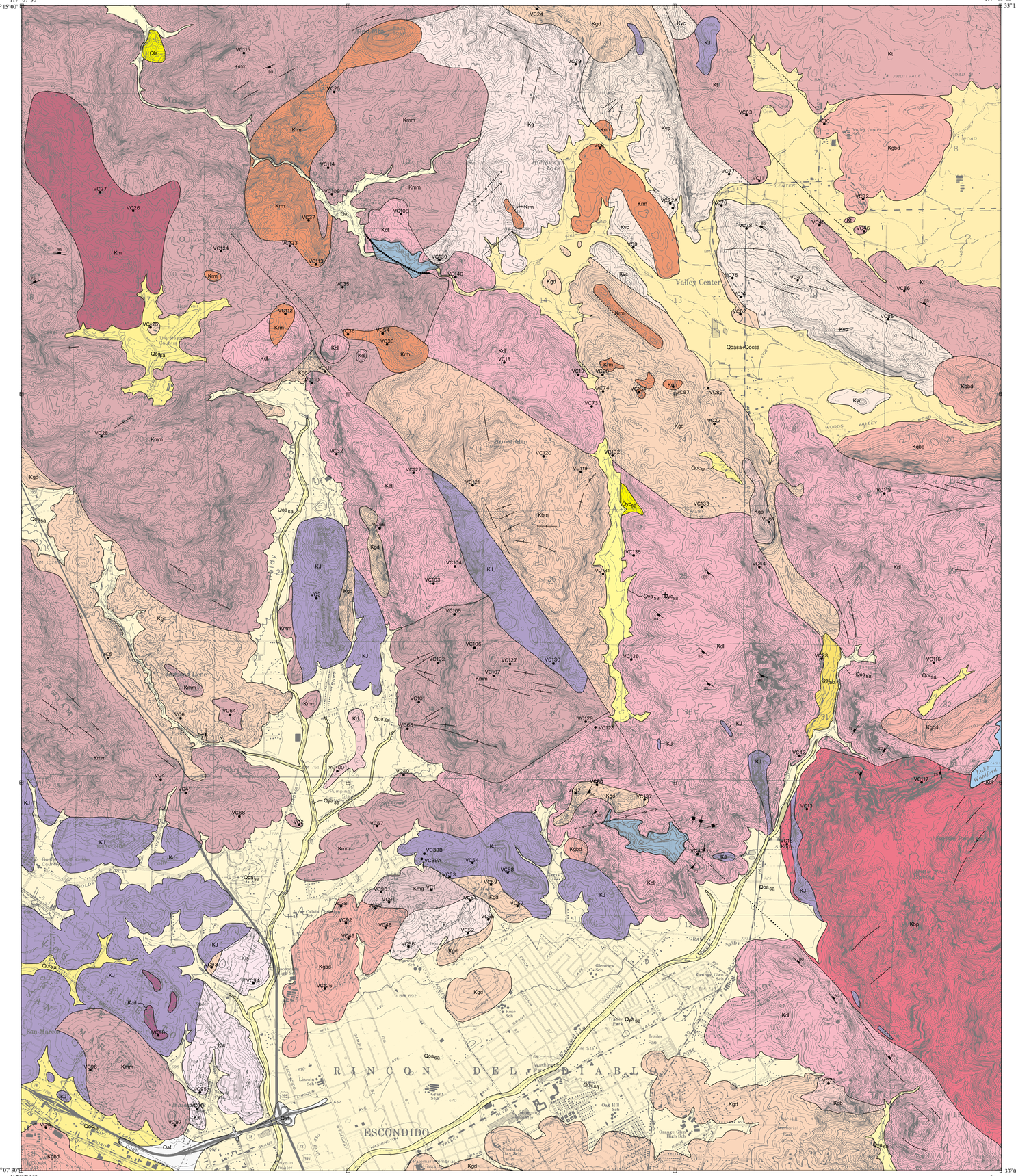
DEPARTMENT OF CONSERVATION
Division of Mines and Geology



Topographic base by U.S. Geological Survey
7.5' Valley Center Quadrangle
Polyconic projection, contour interval 20 feet,
dotted lines 10 feet.

UTM GRID AND 1968 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24000

This geologic map was funded in part by the U.S. Geological Survey National Cooperative Geologic Mapping Program, STATEMAP Award no. 98HQAG2049.

CORRELATION OF MAP UNITS

Qaf			
Qya, Qyc	Holocene	QUATERNARY	CENOZOIC
Qls			
Qof, Qoa, Qoc	Pleistocene		
Kbm, Kmm, Km, Kdl, Kr, Kbp, Krm, Kvc, Kis, Keg, Kg, Kgd, Kmg, Kqbd, Kd, Kt, Kgb		CRETACEOUS	MESOZOIC
KJ, KJg, KJd		JURASSIC	

DESCRIPTION OF MAP UNITS

MODERN SURFICIAL DEPOSITS -- Sediment recently deposited in washes and artificial fills.

Qaf — Artificial fill (late Holocene) - Sand, gravel, and boulders used for "man made" fills.

YOUNG SURFICIAL DEPOSITS -- Sedimentary units that are slightly consolidated to cemented and slightly to moderately dissected.

Qya — Young alluvial flood plain deposits (Holocene and late Pleistocene) - Mostly unconsolidated, poorly sorted, permeable flood plain sediment.

Qyc — Young colluvial deposits (Holocene and late Pleistocene) - Mostly poorly consolidated and poorly sorted slope wash and stream deposits.

Qls — Landslide deposits (Holocene to Pleistocene).

OLD SURFICIAL DEPOSITS -- Sedimentary units that are moderately consolidated and slightly to moderately well dissected. Older surficial deposits have upper surfaces that are capped by moderately to well-developed soils.

Qoa — Older alluvial flood plain deposits (Pleistocene, younger than 500,000 years) - Mostly moderately well consolidated, poorly sorted, permeable flood plain deposits.

Qoc — Older colluvial deposits (Pleistocene, younger than 500,000 years) - Mostly moderately well consolidated, poorly sorted slope wash and stream deposits.

Qof — Older fan deposits (Pleistocene, younger than 500,000 years) - Mostly poorly consolidated fan, debris flow, and talus deposits.

BEDROCK UNITS

Kbm — Granodiorite of Burnt Mountain (Cretaceous) - Leucocratic biotite granodiorite; very fine grained, massive.

Kmm — Monzogranite of Merriam Mountain (Cretaceous) - Leucocratic hornblende-biotite monzogranite; medium to coarse grained, massive.

Km — Quartzdiorite of Mountain Meadows (Cretaceous) - Hornblende quartzdiorite; medium grained, dark gray.

Kdl — Granite of Dixon Lake (Cretaceous) - Leucocratic biotite granite; very fine grained, sub-porphyritic.

Kr — Granodiorite of Rimrock (Cretaceous) - Biotite granodiorite; fine grained, sub-porphyritic.

Kbp — Granite of Bottle Peak (Cretaceous) - Leucocratic, hornblende-biotite granite, coarse grained.

Krm — Quartz bearing diorite of Red Mountain (Cretaceous) - Biotite-hornblende diorite; coarse grained, dary gray, massive.

Kvc — Monzogranite of Valley Center (Cretaceous) - Leucocratic biotite monzogranite; coarse grained, massive.

Kis — Granite of Indian Springs (Cretaceous) - Biotite granite: fine grained granite similar in appearance to Kdl.

Keg — Tonalite of Cole Grade (Cretaceous) - Hornblende-biotite-tonalite; coarse grained, massive.

Kg — Granite undivided (Cretaceous) - Mostly biotite granite, coarse to medium grained, massive.

Kgd — Granodiorite undivided (Cretaceous) - Mostly hornblende-biotite granodiorite, coarse to medium grained.

Kmg — Monzogranite undivided (Cretaceous) - Mostly biotite-hornblende monzogranite, coarse grained.

Kqbd — Quartz bearing diorite undivided (Cretaceous) - Mostly biotite-hornblende, quartz bearing diorite; medium grained, dark gray, massive.

Kd — Diorite undivided (Cretaceous) - Mostly hornblende diorite; medium to coarse grained, dark gray, massive.

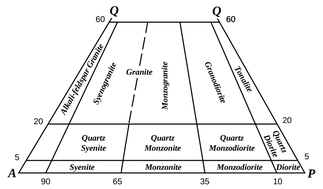
Kt — Tonalite undivided (Cretaceous) - Mostly hornblende-biotite tonalite; coarse grained, light gray.

Kgb — Gabbro undivided (Cretaceous) - Mostly biotite-hornblende-hypersthene gabbro; coarse grained, dark gray, massive.

KJ — Metavolcanic and metasedimentary rocks undivided (Cretaceous and Jurassic) - low grade (greenschist facies) rocks that are in part coeval with and in part older than the Cretaceous plutonic rocks they lie in contact with.

KJg — Metagranitic rocks (Cretaceous and Jurassic) - mostly gneiss; very light gray to white, massive.

KJd — Metavolcanic dikes undivided (Cretaceous and Jurassic) - dikes that cut KJ; very fine grained, dark gray, massive.



Classification of plutonic rock types (from IUGA, 1973, and *Streckeisen, 1973). A, alkali feldspar; P, plagioclase feldspar; Q, quartz.

*Streckeisen, A.L., 1973, Plutonic rocks--Classification and nomenclature recommended by the IUGA Subcommission on Systematics of Igneous Rocks: Geotimes, vol.18, pp.26-30.

MAP SYMBOLS

Contact between map units - solid where accurately located, dotted where concealed.

Faults - solid where accurately located; dashed where approximately located or inferred; dotted where concealed. Arrow and number indicate direction and angle of dip of fault plane.

Strike and dip of inclined joints.

Strike of vertical joints.

Airphoto lineament - mostly joints and minor faults.

Pegmatite dike.

VC100 — Location of samples collected for thin section analysis.

REFERENCES

NOTE: Previous geologic mapping in this area can be found in a regional reconnaissance study by E.S. Larsen Jr. (1948), entitled Batholith and associated rocks of Corona, Elsinore, and San Luis Rey quadrangles, southern California and published as Geologic Society of America Memoir 29 (scale 1:125,000). Larsen's mapping has been synthesized by Weber (1963) in a study entitled Geology and mineral resources of San Diego County, California and published as California Division of Mines and Geology County Report 3 (1" = 3 miles). In addition, Weber (1963) sites unpublished mapping in the Valley Center quadrangle by R.H. Merriam (1953) which is a modification of Larsen's (1948) map at a scale of 1:24,000.